

WHAT IS CLAIMED:

1. A method to fabricate an organic electronic device, comprising:
depositing a first electrode on a substrate;
depositing an organic polymer solution on said first electrode,
wherein said solution includes a first solvent, at least one organic polymer, and a second solvent, and
wherein said first solvent has a high solubility and a faster evaporation rate than said second solvent, and said second solvent has a very low solubility; and
allowing said solution to dry to form a substantially uniform organic polymer layer.
2. The method of claim 1 wherein
said first solvent dissolves at least about one weight percent of said plurality of organic polymers; and
said second solvent dissolves less than about one-fourth weight percent of said plurality of organic polymers.
3. The method of claim 1 wherein
said first solvent has a lower boiling point than said second solvent.
4. The method of claim 3 wherein
said first solvent has a boiling point less than about 150°C and said second solvent has a boiling point greater than about 200°C.
5. The method of claim 1 wherein allowing said solution to dry includes
said first solvent evaporating from said solution and soon after said first solvent starts to evaporate, said solution rapidly gels resulting in said substantially uniform organic polymer layer.
6. The method of claim 1 wherein allowing said solution to dry includes

increasing a rate of evaporation of at least one of: (1) said first solvent and (2) said second solvent by at least one of: (1) raising a temperature of said solution and (2) applying a vacuum to said solution.

7. The method of claim 1 further comprising
prior to depositing said organic polymer solution, forming on said first electrode a bank having an aperture, wherein said organic polymer solution is deposited into said aperture, and said bank holds said deposited organic polymer solution.
8. The method of claim 1 further comprising
depositing a second electrode on said substantially uniform organic polymer layer.
9. The method of claim 1 wherein depositing said organic polymer solution includes ink jet printing or spin coating said organic polymer solution.
10. The method of claim 1 wherein
said first solvent is: toluene, chlorobenzene, ethyl benzene, xylene, cumene, anisole, or mesitylene; and
said second solvent is: decalin, tetramethyl benzene, N-methyl-pyrrolidone, pentyl benzene, gamma butyrolactone, alpha-terpineol, propylene, carbonate, or methylnaphthalene.
11. The method of claim 10 wherein said organic polymer is a polyfluorene or copolymers, derivatives, or combinations thereof.
12. The method of claim 10 wherein said organic polymer is a poly-p-phenylene vinylene or copolymers, derivatives, or combinations thereof.
13. The method of claim 10 wherein said organic polymer is a polyspiro or copolymers, derivatives, or combinations thereof.

14. The method of claim 7 wherein said solution further includes a third solvent, wherein said third solvent has a low surface tension so that said at least one organic polymer in said solution completely fills said aperture.
15. The method of claim 1 wherein said substantially uniform organic polymer layer has a thickness variation within $\pm 15\%$ across 70% of a width of said layer.
16. The method of claim 1 wherein said organic electronic device is an OLED.
17. An organic electronic device, comprising:
 - a first electrode on a substrate;
 - a substantially uniform organic polymer layer on said first electrode; and
 - a second electrode on said substantially uniform organic polymer layer,wherein said substantially uniform organic polymer layer is formed from a solution that includes a first solvent, at least one organic polymer, and a second solvent, and wherein said first solvent has a high solubility and a faster evaporation rate than said second solvent, and said second solvent has a very low solubility.
18. The device of claim 17 wherein
 - said first solvent dissolves at least about one weight percent of said plurality of organic polymers; and
 - said second solvent dissolves less than about one-fourth weight percent of said plurality of organic polymers.
19. The device of claim 17 wherein
 - said first solvent has a lower boiling point than said second solvent.
20. The device of claim 19 wherein
 - said first solvent has a boiling point less than about 150°C and said second solvent has a boiling point greater than about 200°C.

21. The device of claim 17 further comprising
a bank on said first electrode, said bank includes an aperture into which said solution is deposited.
22. The device of claim 17 wherein
said first solvent is: toluene, chlorobenzene, ethyl benzene, xylene, cumene, anisole, or mesitylene; and
said second solvent is: decalin, tetramethyl benzene, N-methyl-pyrrolidone, pentyl benzene, gamma butyrolactone, alpha-terpineol, propylene, carbonate, or methylnaphthalene.
23. The device of claim 22 wherein said organic polymer is a polyfluorene or copolymers, derivatives, or combinations thereof.
24. The device of claim 22 wherein said organic polymer is a poly-p-phenylene vinylene or copolymers, derivatives, or combinations thereof.
25. The device of claim 22 wherein said organic polymer is a polyspiro or copolymers, derivatives, or combinations thereof.
26. The device of claim 17 wherein said substantially uniform organic polymer layer has a thickness variation within $\pm 15\%$ across 70% of a width of said layer.
27. The device of claim 17 wherein said organic electronic device is an OLED.
28. A method to form a substantially uniform organic polymer layer on an object, comprising:
mixing at least one organic polymer in a first solvent and a second solvent to form an organic polymer solution, wherein said first solvent has a high solubility and a faster evaporation rate than said second solvent, and said second solvent has a very low solubility;
effectively depositing said solution on said object; and

allowing said solution to dry to form a substantially uniform organic polymer layer on said object.

29. The method of claim 28 wherein
said first solvent dissolves at least about one weight percent of said plurality of organic polymers; and
said second solvent dissolves less than about one-fourth weight percent of said plurality of organic polymers.
30. The method of claim 28 wherein
said first solvent has a lower boiling point than said second solvent.
31. The method of claim 30 wherein
said first solvent has a boiling point less than about 150°C and said second solvent has a boiling point greater than about 200°C.
32. The method of claim 28 wherein effectively depositing said solution includes discharging said solution through a nozzle of an ink jet printhead such that said at least one organic polymer stays in solution during discharge.
33. The method of claim 28 wherein allowing said solution to dry includes
said first solvent evaporating from said solution and soon after said first solvent starts to evaporate, said solution rapidly gels resulting in said substantially uniform organic polymer layer.
34. The method of claim 28 wherein
said first solvent is: toluene, chlorobenzene, ethyl benzene, xylene, cumene, anisole, or mesitylene; and
said second solvent is: decalin, tetramethyl benzene, N-methyl-pyrrolidone, pentyl benzene, gamma butyrolactone, alpha-terpineol, propylene, carbonate, or methylnaphthalene.

35. The method of claim 32 wherein said organic polymer is a polyfluorene or copolymers, derivatives, or combinations thereof.
36. The method of claim 32 wherein said organic polymer is a poly-p-phenylene vinylene or copolymers, derivatives, or combinations thereof.
37. The method of claim 32 wherein said organic polymer is a polyspiro or copolymers, derivatives, or combinations thereof.
38. The method of claim 28 wherein said object is: a substrate, an electrode, or a hole transporting layer.
39. The method of claim 28 wherein said substantially uniform organic polymer layer has a thickness variation within $\pm 15\%$ across 70% of a width of said layer.
40. An organic polymer solution, comprising:
at least one organic polymer;
a first solvent; and
a second solvent,
wherein said first solvent has a high solubility and a faster evaporation rate than said second solvent, and said second solvent has a very low solubility.
41. The solution of claim 40 wherein
said first solvent dissolves at least about one weight percent of said plurality of organic polymers; and
said second solvent dissolves less than about one-fourth weight percent of said plurality of organic polymers.
42. The solution of claim 40 wherein
said first solvent has a lower boiling point than said second solvent.
43. The solution of claim 42 wherein

said first solvent has a boiling point less than about 150°C and said second solvent has a boiling point greater than about 200°C.

44. The solution of claim 40 wherein said solution is deposited on an object and allowed to dry to form a substantially uniform organic polymer layer on said object, wherein said object is: a substrate, an electrode, or a hole transporting layer.

45. The solution of claim 40 wherein as said solution dries, said first solvent evaporates from said solution and soon after said first solvent starts to evaporate, said solution rapidly gels resulting in said substantially uniform organic polymer layer.

46. The solution of claim 40 wherein
said first solvent is: toluene, chlorobenzene, ethyl benzene, xylene, cumene, anisole, or mesitylene; and
said second solvent is: decalin, tetramethyl benzene, N-methyl-pyrrolidone, pentyl benzene, gamma butyrolactone, alpha-terpineol, propylene, carbonate, or methylnaphthalene.

47. The solution of claim 46 wherein said organic polymer is a polyfluorene or copolymers, derivatives, or combinations thereof.

48. The solution of claim 46 wherein said organic polymer is a poly-p-phenylene vinylene or copolymers, derivatives, or combinations thereof.

49. The solution of claim 46 wherein said organic polymer is a polyspiro or copolymers, derivatives, or combinations thereof.

50. The solution of claim 40 wherein said substantially uniform organic polymer layer has a thickness variation within $\pm 15\%$ across 70% of a width of said layer.